SEMESTER END EXAMINATION, APRIL - MAY 2025

Course Name: -B.Tech (CSE) **Semester:6th**

Paper Name: -Computer Network **Paper Code: - TCS-601**

Time - 3 Hrs + 20 minutes per hour extra time for V.I. & examinees with writer. **Max Marks-70**

Additional 30 Minutes for Mid-Test.

समय– 3 घण्टे + 20 मिनट प्रति घंटे अतिरिक्त–दृष्टिबाधित एवं सह लेखक परीक्षार्थियों के लिए। अधिकतम अंक–70

30 मिनट अतिरिक्त मिड–टेस्ट के लिए

Instructions:

- The question paper consists of three sections namely A, B, C. All sections are compulsory.
- Section A- Each question carries **3 marks. All questions are compulsory.**
- Section B- Answer any **5 out of 7** given questions. Each question carries **7 marks.**
- Section C- Answer any **2 out of 3** given questions. Each question carries **10 marks.**
- Section D- Each question carries **02 mark.** All questions are compulsory.

निर्देश :

प्रश्न पत्र में तीन खण्ड अ, ब, व स हैं। सभी खण्ड अनिवार्य हैं।

- खण्ड–अ में प्रत्येक प्रश्न **तीन अंक** का है। **सभी प्रश्न अनिवार्य हैं।**
- खण्ड–ब में **सात प्रश्नों में से किन्हीं पाँच** प्रश्नों के उत्तर दें। प्रत्येक प्रश्न **सात अंक** का है।
- खण्ड–स में **तीन प्रश्नों में से किन्हीं दो** प्रश्नों के उत्तर दें। प्रत्येक प्रश्न **10 अंक** का है।
- खण्ड–द में प्रत्येक प्रश्न **02** अंक का है। सभी प्रश्न अनिवार्य हैं।

Section – A (खण्ड–अ)

Objective Questions(वस्तुनिष्ठप्रश्न)

1. Answer all the following questions. **5×3=15**

निम्नलिखितसभीप्रश्नअनिवार्यहैं।

i) Assume that sources S and Destination D are connected through two intermediate routers labelled R determine how many times each packet has to visit the network layer and data link layer during a transmission from S to D?

A) NL-4 DL-4 B) NL-4 DL-3 C) NL-4 DL-6 D) NL-2 DL-6

(ii) What is PDU Called in Transport layer?

A) Depends on Protocols B) Segment C) User datagram D) packet

(iii) What does one say about the Transport layer?

A) Bridge of layer B) Hurt of OSI C) A & B D) Only B

(iv) How many possible addresses class-A in Net ID?

A) 2^7 B) 2^8 C) 2^{31} D) 2^{30}

(v) What is zero layer& passive of OSI model?

A) Transmission media B) Segment

C) Both A&B D) ID-Datagram

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Section – B (खण्ड–ब)

Short Answer Questions(लघुउत्तरीय प्रश्न)

2. Answer any five of the following questions in maximum 150 words.

निम्नलिखित में से किन्हीं पाँच प्रश्नों के उत्तर दें। 5×7=35

(i) a) Describe the Working and cooperation of Data Link layer for IEEE OSI model?

b) explains Error detection techniques. Explain types of error Single bit error and multiple error

(ii) a) What is the Fragmentation? Compare and Control Transparent and Non transparent fragmentation?

b) describes the connecting devices of OSI layers?

(iii) a) Explain DES algorithm?

b) encodes the data bits 0101 into a seven bit even parity hamming code

(iv) a) Explain IPv4 Addressing with the help of IPv4 Header?

b) Explain HTTP with Header?

(v) a) Explain TCP/IP protocol with neat diagram?

b) describes the transmission modem with example

(vi) a) What are the different types of Transmission Technology? Explain in detail.

b) Write short technical note on MAN&LAN?

(vii) a) Explain different types of networks on the basis of Transmission technology?

b) Explain networking topology with neat diagram?

Section – C (खण्ड–स)

Descriptive Questions(विवरणात्मकप्रश्न)

3. Answer any02question of the following question in maximum 500 words. 2×10=20

निम्नलिखितमें से किन्हीं 2 प्रश्न के उत्तर दें

(i) a) Explain RSA algorithms Withe mechanisms?

b) Calculate CRC for a 10-bit sequence 1010011110 the generator polynomial is X^3+x+1

c) Sketch the Manchester encoding for the given bit stream 0001110101

(ii) a) What are different services provided by data link layer?

b) Explain IP addressing? Explain limitations of classes?

c) Explain IPV6 Header With diagram?

(iii) a) Explain in detail CSMA/CD protocol in detail. How it detects collision?

b) Explain 3- Generation of packet switching?

c) Describe the transport layer & transmission control

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SEMESTER END EXAMINATION, APRIL-MAY 2025

Mid-Test

Course Name: - B.Tech (CSE) **Semester: -VIth**

Paper Name: - C. N **Paper Code: -TCS-601**

Time - 30 minutes. Max Marks-20

All questions are compulsory. 2×10=20

सभी प्रश्न अनिवार्य हैं।

Objective Questions.

बहुविकल्पीय प्रश्न।

1) How many Characters per second (7 bits+1 parity) can be transmitted over a 2400 bps line if the Transfer is Synchronous (1 start and 1 stop bit)

a) 300 b) 240 c) 250 d) 275

2) What types of address is the application layer

a) Specific protocol-based address b) Special based protocol address

c) Distinct protocol-based address d) Both B&C

3) The maximum number of IPv4 router addresses that can be listed in the record route (RR) option field of an IPv4 header is?

a) 36 b) 32 c) 31 d) 29

4) a). UDP Header port no b). Ethernet MAC Address c). IPv6 Next Header d). TCP Header s Sequence number

i) 48 ii) 8 iii) 32 iv) 16

1. a -iii, b-iv, c-ii, d-1 2. a-ii, b-I, c-iv, d-iii 3.a-iv, b-I, c-ii, d-iii 4. a-iv, b-I, c-iii, d-ii

5) consider the three commands PROMPT, HEAD and RCPT. Which of the following options indicate a correct association of these commands with protocol where these are used?

a. HTTP, SMTP, FTP b. FTP, HTTP, SMTP c. HTTP, FTP, SMTP d. SMTP, HTTP, FTP

6) The protocol data unit (PDU) for the application layer in the Internet Stack is?

a. Segment b. Datagram c. Message d. Frame

7) No of character used in domain name system is.

a.255 b.256 c. 254 d. 251

8) Total no of possible address class A-in Network?

a). 2^7 b). 2^{31} c). 2^{30} d). 2^{29}

9) Total no of IP address per network in class A is?

a). 2^{24} b). 2^{31} c). 2^{29} d) NDT

10) Which IP Address should X configure its gateway as?

a). 192.168.1.67 b) 192.168.1.110 c) 192.168.1.135 d) 192.168.1.155

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